

Claim Amendments

Please amend claims 1, 2, 4, 5, 8-11, 13, 15-17, 20-25, 27, 29 and 31, cancel claims 3, 6, 12, 14, 18, 19, 26, 28, 30 and 32, and add new claims 34-37 as follows:

1. (currently amended) A method for receiving a packet stream at a client, comprising:

~~determining client's chosen receiving from a server~~ pre-decoder buffering parameters ~~at a streaming client of a multimedia streaming network, wherein the multimedia streaming network has a streaming server to transmit to the streaming client a packet stream over a constant delay channel, the server adapted to provide to the streaming client a signal indicative of pre-decoder buffering parameters, and wherein the pre-decoder buffering parameters are determined at the server to ensure that the streaming client is able to play out the packet stream without client buffer violation when the packet stream is transmitted over a constant delay, reliable transmission channel;~~

~~estimating parameters of a jitter buffer based on packet stream transfer delay variation; and providing transmitting to the server information indicative of an aggregate of the client's chosen pre-decoder buffering parameters and the jitter buffer to the streaming server, so that client's jitter buffering capabilities can be determined based on a difference between the client's chosen pre-decoder buffering parameters provided to the streaming server and the pre-decoder buffering parameters provided by the streaming server.~~

2. (currently amended) A method according to claim 1, wherein the pre-decoder buffering ~~buffer~~ parameters ~~provided by the streaming server to the streaming client~~ received are chosen based on variable bit-rate characteristics of the transmitted packet stream and the buffering applied by the streaming server.

3. (canceled)

4. (currently amended) A method according to claim 1, wherein ~~the streaming client is adapted to provide the information indicative of the client's chosen pre-decoder~~ aggregate buffering parameters is transmitted to the streaming server at beginning of a new streaming session.

5. (currently amended) A method according to ~~any of claim 1, wherein the streaming client is adapted to dynamically change its pre-decoder buffering parameters during a streaming session, said method further comprising:~~

estimating packet stream transfer delay variation;

determining parameters of the jitter buffer based on the estimated packet stream transfer delay variation during a streaming session; and

transmitting an aggregate of the pre-decoder buffering parameters and the changed jitter buffer providing further information indicative of the changed client's pre-decoder buffering parameters to the streaming server during the streaming session.

6. (canceled)

7. (previously presented) A method according to claim 1, wherein the streaming server is adapted to optionally consider the information indicative of the client's chosen pre-decoder buffering parameters in rate control and/ or rate shaping.

8. (currently amended) A method according to claim 1, wherein the ~~information indicative of the client's chosen pre-decoder~~ aggregate buffering parameters includes at least one of the following:

information regarding a size of the client's pre-decoder buffer,

information regarding a pre-decoder buffering period, and

information regarding a post-decoder buffering time.

9. (currently amended) A method according to claim 1, wherein the ~~streaming client is adapted to provide the information indicative of the client's chosen pre-decoder~~ aggregate buffering parameters is transmitted to the streaming server in a Real-Time Streaming Protocol (RTSP) request message.

10. (currently amended) A method according to claim 9, wherein the ~~information indicative of the client's chosen pre-decoder~~ aggregate buffering parameters is provided to the streaming server in an RTSP PLAY request message.

11. (currently amended) A method according to claim 9, wherein the ~~information indicative of the client's chosen pre-decoder~~ aggregate buffering parameters is provided to the ~~streaming~~ server in an RTSP PING request message.

12. (canceled).

13. (currently amended) A streaming client device, comprising:

~~at least one buffer;~~

~~means for receiving a pre-decoder buffer for storing a packet stream from a streaming server and storing the packet stream in said at least one buffer;~~

~~means a media decoder for playing-out decoding the packet stream;~~

~~a buffer controller for estimating parameters of a jitter buffer based on packet stream transfer delay variation; and~~

~~means a signaling engine for receiving from the server pre-decoder buffer parameters to ensure that the client is able to play out the packet stream without buffer violation when the packet stream is transmitted over a constant delay, reliable transmission channel, and for providing information indicative of an aggregate of the client's chosen pre-decoder buffering parameters and the jitter buffer to the streaming server.~~

14. (canceled)

15. (currently amended) A streaming client device according to claim 13, ~~wherein said at least one buffer comprises a pre-decoder buffer, a delay jitter buffer and~~ further comprising a post-decoder buffer for storing media data after decoding.

16. (currently amended) A streaming client device according to claim ~~[[14]]~~ 13, wherein the pre-decoder buffer and ~~delay~~ the jitter buffer are ~~integrated~~ implemented as a single buffer unit.

17. (currently amended) A streaming client device according to claim 15, wherein the pre-decoder buffer and the ~~delay~~ jitter buffer are ~~integrated~~ implemented as a single buffer unit.

18. (canceled)

19. (canceled)

20. (currently amended) A streaming client ~~device~~ according to claim 13, wherein the information indicative of the ~~client's chosen pre-decoder~~ aggregate buffering parameters is provided to the ~~streaming~~ server at beginning of a new streaming session.

21. (currently amended) A streaming client ~~device~~ according to claim 13, wherein
the buffer controller is adapted for estimating the packet stream transfer delay variation and
further adapted for determining parameters of the jitter buffer based on the estimated packet stream
transfer delay variation; and

the signaling engine is further adapted to provide the aggregate of the client's chosen pre-
decoder buffering parameters and the changed jitter buffer are dynamically changed during a
streaming session, and wherein said providing means is adapted to provide further information
indicative of the changed client's pre-decoder buffering parameters to the streaming server during
[[the]] a streaming session.

22. (currently amended) A streaming client ~~device~~ according to claim 13, wherein the information indicative of the ~~client's chosen pre-decoder~~ aggregate buffering parameters includes at least one of the following:

information regarding a size of the client's pre-decoder buffer,
information regarding a pre-decoder buffering period, and
information regarding a post-decoder buffering time.

23. (currently amended) A streaming client ~~device~~ according to claim 13, wherein the information indicative of the ~~client's chosen pre-decoder~~ aggregate buffering parameters is provided to the ~~streaming~~ server in a Real-Time Streaming Protocol (RTSP) request message.

24. (currently amended) A streaming client ~~device~~ according to claim 23, wherein the information indicative of the ~~client's chosen pre-decoder~~ aggregate buffering parameters is provided to the ~~streaming~~ server in an RTSP PLAY request message.

25. (currently amended) A streaming client ~~device~~ according to claim 23, wherein the information indicative of the ~~client's chosen pre-decoder~~ aggregate buffering parameters is provided to the streaming server in an RTSP PING request message.

26. (canceled)

27. (currently amended) A streaming server ~~device comprising:~~

~~means~~ for transmitting a packet stream to a streaming client device, said streaming server comprising:

a signaling engine for transmitting pre-decoder buffer parameters to ensure the client is able to play out the packet stream without buffer violation when the packet stream is transmitted over a constant delay, reliable transmission channel; and

~~means~~ for receiving information indicative of an aggregate of chosen the client's pre-decoder buffering parameters of the streaming client device and a jitter buffer.

28. (canceled)

29. (currently amended) A streaming server ~~device~~ according to claim 27, further comprising:

~~adapted to apply rate control and/or rate shaping algorithms that utilize the information indicative of the client's chosen pre-decoder~~ a rate controller adapted to adjust a rate at which media data is transmitted from the server in accordance with the aggregate buffering parameters to compensate for packet transfer delay and channel rate variations occurring during transmission of said packet stream from the streaming server device to the streaming client device.

30. (canceled)

31. (currently amended) A streaming server ~~device~~ according to claim 27, wherein the information indicative of the ~~client's pre-decoder~~ aggregate buffering parameters received by the server includes at least one of the following:

information regarding a size of the client's pre-decoder buffer,
information regarding a pre-decoder buffering period, and
information regarding a post-decoder buffering time.

32. (canceled)

33. (new) A streaming server according to claim 29, wherein the information indicative of the aggregate buffering parameters is received during a streaming session; and the rate controller is adapted to re-adjust the rate at which media data is transmitted from the server in accordance with the changed aggregate buffering parameters.

34. (new) A method for transmitting a packet stream to a client comprising:

transmitting to the client pre-decoder buffering parameters to ensure the client is able to play out the packet stream without buffer violation when the packet stream is transmitted over a constant-delay, reliable transmission channel; and

receiving information indicative of an aggregate of the client's buffering parameters and a jitter buffer.

35. (new) A method according to claim 34, wherein the information indicative of the aggregate buffering parameters received by the server includes at least one of the following:

information regarding a size of the client's pre-decoder buffer,
information regarding a pre-decoder buffering period, and
information regarding a post-decoder buffering time.

36. (new) A method according claim 34, further comprising:

adjusting the rate at which media data is transmitted in accordance with the aggregate buffering parameters.

37. (new) A method according to claim 34, wherein the information indicative of the aggregate buffering parameters is received during a streaming session; the method further comprising:

re-adjusting the rate at which media data is transmitted in accordance with a changed aggregate buffering parameters.